

REMARKS

By this Amendment, the specification is amended to correct minor informalities, claims 1, 7 and 9 are amended, claims 2-6 and 8 are canceled, without prejudice to or disclaimer of the subject matter found therein, and claims 15-17 are added. No new matter is added. Accordingly, claims 1, 7 and 9-17 are pending, claims 10-14 being withdrawn. Reconsideration of the application is respectfully requested.

I. Substitute Specification

The attached Substitute Specification corrects informalities and replaces the original Specification. A marked-up copy of the specification of attached for the Examiner's convenience.

II. Rejection Under 35 U.S.C. §102(b)

The Office Action rejects claims 1-9 under 35 U.S.C. §102(b) over U.S. Patent No. 6,768,681 to Kim. The rejection is moot with respect to canceled claims 2-6 and 8 and is respectfully traversed with respect to claims 1, 7 and 9.

Claim 1 is amended to include the features of canceled claims 2 and 3. Claims 7 and 9 are only amended to depend from claim 1.

Kim does not disclose a non-volatile semiconductor memory device including "a word gate support section which is disposed on an upper layer of the drain region" and "the word gate support section is formed of an insulator," as recited in independent claim 1.

The Office Action asserts that Kim discloses a memory device including a word gate and a non-volatile memory element. Notwithstanding these assertions, Kim does not disclose an insulative word gate support section disposed on an upper layer of a drain region.

Kim teaches, in Figs. 2A-8A, an EEPROM device including a unit cell 50 that includes a memory cell 92 having a conductive gate 72, e.g., word gate support section, and an ONO layer 65 provided above a channel area 84 and an junction area 82, e.g., source

region, located in a substrate 60. See col. 9, lines 20-22. Kim also teaches that the junction area 82 is connected to a bit line BL22 and the conductive gate 72 is connected to a word line WL22. See col. 8, lines 15-19 and col. 9, lines 2-5. Because Kim teaches a conductive word gate support section disposed on a source region, a nitride layer 62 of the ONO layer 65 serves as an electron trapping region that is formed between the conductive gate 72, and the channel region 84 and the junction area 82. See col. 9, lines 16-20.

The non-volatile semiconductor memory device of claim 1 may include, for example, an insulative word gate support section 411 provided above a drain region BLD or a source region SLD. As shown in Figs. 3-5 and 14-15, a nitride film 417 may be formed between a word gate 412 and a channel region. However, contrary to Kim, the nitride film 417 is not formed between the insulative word gate support section 411 and the drain region BLD or the source region SLD. Thus, an electron trapping region is not formed between the insulative word gate support section 411 and the drain region BLD or the source region SLD. Kim does not teach or suggest such features.

Because Kim teaches an electron trapping region formed between the conductive word gate support section 72 and the source region 82, Kim does not teach or suggest the non-volatile semiconductor memory device of claim 1.

Therefore, claim 1 is patentable over Kim. Claims 7 and 9 depend from claim 1, and thus are also patentable over Kim for at least the reasons set forth above, as well as for the additional features the recite. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

III. New Claims

New claim 15 incorporates the features of original claim 1 and canceled claims 2 and 4. New claims 16-17 depend from new claim 15.

As discussed above with respect to claim 1, Kim teaches an electron trapping region formed between the support section word gate support section 72 and the source region 82. In the non-volatile semiconductor memory device of claim 15, the nitride film 417 is not formed between the insulative word gate support section 411 and the drain region BLD or the source region SLD. Thus, contrary to Kim, an electron trapping region is not formed between the insulative word gate support section 411 and the drain region BLD or the source region SLD.

For at least these reasons, claim 15 is also patentable. Claims 16 and 17 depend from claim 15, and thus are also patentable.

IV. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 7 and 9-17 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachments:

Petition for Extension of Time
Substitute Specification
Marked-Up Specification

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